

AMENDMENTS TO THE DRAWINGS

The attached sheets of drawings includes changes to FIGs. 1-3. These sheets replace the original sheets including FIGs. 1-3. A marked up version of the original FIGs. 1-3, showing the changes marked in red, is also provided for your reference.

Attachment: Annotated Sheets Showing Changes
Replacement Sheets

REMARKS

Claims 1-24 are pending in the application. The drawings were objected to because of missing reference numbers and "Prior Art" designations. The title was objected to as not being descriptive. Claims 9-11 were objected to as being of improper dependent form. Claims 10 and 11 were further objected to as being of improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. Claims 1-24 were rejected under 35 U.S.C. §103(a) as being unpatentable over Applicant Admitted Prior Art (AAPA) in view of Liu et al. Claims 1, 9-11, 13 and 15 have been amended. Reconsideration and reexamination of the application in view of the amendments and following remarks is respectfully requested.

The drawings were objected to because of missing reference numbers and "Prior Art" designations. In particular, FIGs. 1 and 2 were objected to because they were not labeled as prior art, and FIG. 3 was objected to because references 302 and 304 were missing. FIGs. 1 and 2 have been amended to include a "PRIOR ART" label, and FIG. 3 has been amended to add the missing references. With these amendments, it is respectfully submitted that the objection to the drawings has been overcome.

The title was objected to as not being descriptive. The title has been amended to "Generalized Queue and Specialized Register Configuration for Coordinating Communications Between Tightly Coupled Processors." With this amendment, it is respectfully submitted that the objection to the title has been overcome.

Claims 9-11 were objected to as being of improper dependent form. In particular, claims 9-11 were objected to as being of improper dependent form for failing to further limit the subject matter of a previous claim. Claims 9-11 have been amended to put the claims in a more conventional dependent claim format that clearly indicates the additional limitations being added in those claims. With these amendments, it is respectfully submitted that the objection to these claims has been overcome.

Claims 10 and 11 were further objected to as being of improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. This objection is respectfully traversed, because neither claim 10 nor claim 11 are multiple dependent claims, and the claims they depend from, claims 9 and 10, are also not multiple dependent claims.

The present invention is directed to the coordination of communications between a plurality of tightly coupled processors in a combined channel operation. The processors communicate with one another using one or more "generalized" queues connected to the tightly coupled processors that store entries to be passed between the tightly coupled processors. *The queues are "generalized" because the content, size and location of the queues is configurable in accordance with programs executable in the tightly coupled processors.* For example, the generalized queues can hold messages, status or other information depending on how they are configured by the programs. The processors also communicate using one or more specialized registers connected to the tightly coupled processors that assist the tightly coupled processors in utilizing the generalized queues for interprocessor communications and adapting the generalized queues to match a current operating environment. *The content of the specialized registers is also configurable in accordance with programs executable in the tightly coupled processors.* The generalized queues and specialized registers are advantageous because they allow a processor to be able to configure the inter-processor communications between tightly coupled processors, providing more flexibility and adaptability than conventional inter-processor communication hardware.

Claims 1-24 were rejected under 35 U.S.C. §103(a) as being unpatentable over Applicant Admitted Prior Art (AAPA) in view of Liu. Claim 1 has been amended. With the amendment to claim 1, it is respectfully submitted that this rejection has been overcome.

Claims 1 and 13 have been amended to recite, in part, "wherein the generalized queues and specialized registers are content-configurable in accordance with programs executable in the tightly coupled processors." Support for this amendment is found on page 12 lines 17-22, page 16 lines 5-7 and 12-14, and numerous other locations throughout the application.

Neither AAPA nor Liu, alone or in combination, discloses, teaches or suggests generalized queues that are content-configurable in accordance with programs executable in the tightly-coupled processors, as recited in amended claims 1 and 13. The Examiner acknowledges that AAPA does not specifically disclose generalized queues that are configurable in accordance with programs executable in the tightly coupled processors. The Examiner then goes on to say that Liu discloses this limitation in paragraph [0083] lines 2 and 9-11. However, those lines contain no disclosure at all related to the content-configuration of queues. The queues in Liu are shown in FIG. 2 as reference characters 216, 218, 220, 222 and 110, and a single detailed representation is shown in FIG. 3 as reference character 300. These queues are described in paragraphs [0067] and [0068] as storing I/O completions from different sources, or messages from the other processor. In other words, they have a fixed purpose and store a fixed type of content. There is no discussion in Liu that would suggest that these queues are somehow content-configurable for storing other types of content, as recited in amended claims 1 and 13.

Because neither AAPA nor Liu, alone or in combination, discloses, teaches or suggests all of the limitations of amended claims 1 and 13, it is respectfully submitted that the rejection of claims 1 and 13 under 35 U.S.C. §103(a) as being unpatentable over AAPA in view of Liu has been overcome. In addition, because claims 2-11 depend from claim 1 and claim 14 depends from claim 13, the rejection of those claims has been overcome for the same reasons provided above with respect to claims 1 and 13.

With regard to claims 12 and 24, neither AAPA nor Liu, alone or in combination, discloses, teaches or suggests generalized queues, or adjusting a size and location of the generalized queues. The Examiner states that generalized queues are taught by AAPA at page 2 line 24 (QDR SRAM), but the QDR SRAM does not represent or contain any queues at all. The QDR SRAM is well-understood to be *random access* memory that is not accessed in a queue-like fashion (e.g. first-in-first out) and is merely used for storing data as it is passed between the host bus and the link (see page 2, lines 25-31 of the application). The Examiner acknowledges that AAPA does not specifically disclose adjusting a size and location of generalized queues. The Examiner then goes on to say that Liu discloses this limitation in paragraph [0067]. However, those lines contain no

disclosure at all related to adjusting a size and location of the generalized queues. The queues in Liu are shown in FIG. 2 as reference characters 216, 218, 220, 222 and 110, and a single detailed representation is shown in FIG. 3 as reference character 300. These queues are described in paragraphs [0067] and [0068] as storing I/O completions from different sources, or messages from the other processor. In other words, they have a fixed purpose and store a fixed type of content. There is no discussion in Liu that would suggest that the size and location of these queues are somehow configurable, as recited in claims 12 and 24.

Because neither AAPA nor Liu, alone or in combination, discloses, teaches or suggests all of the limitations of amended claims 12 and 24, it is respectfully submitted that the rejection of claims 12 and 24 under 35 U.S.C. §103(a) as being unpatentable over AAPA in view of Liu has been overcome.

Claim 15 has been amended to recite, in part, "configuring one or more generalized queues to hold a particular type of content." For the same reasons provided above with respect to claims 1 and 13, neither AAPA nor Liu, alone or in combination, discloses, teaches or suggests generalized queues, or configuring one or more generalized queues to hold a particular type of content, as recited in amended claim 15.

Because neither AAPA nor Liu, alone or in combination, discloses, teaches or suggests all of the limitations of amended claim 15, it is respectfully submitted that the rejection of claim 15 under 35 U.S.C. §103(a) as being unpatentable over AAPA in view of Liu has been overcome. In addition, because claims 16-23 depend from claim 15, the rejection of those claims has been overcome for the same reasons provided above with respect to claim 15.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.


If, for any reason, the Examiner finds the application other than in condition for allowance, Applicant requests that the Examiner contact the undersigned attorney at the Los Angeles

telephone number (213) 892-5752 to discuss any steps necessary to place the application in condition for allowance.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, Applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing Docket No. 491442001900.

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Respectfully submitted,

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Enclosure: Drawings: Annotated Sheets Showing Changes 1-3 (Fig. 1-3)
Replacement Sheets 1-3 (Figs. 1-3)

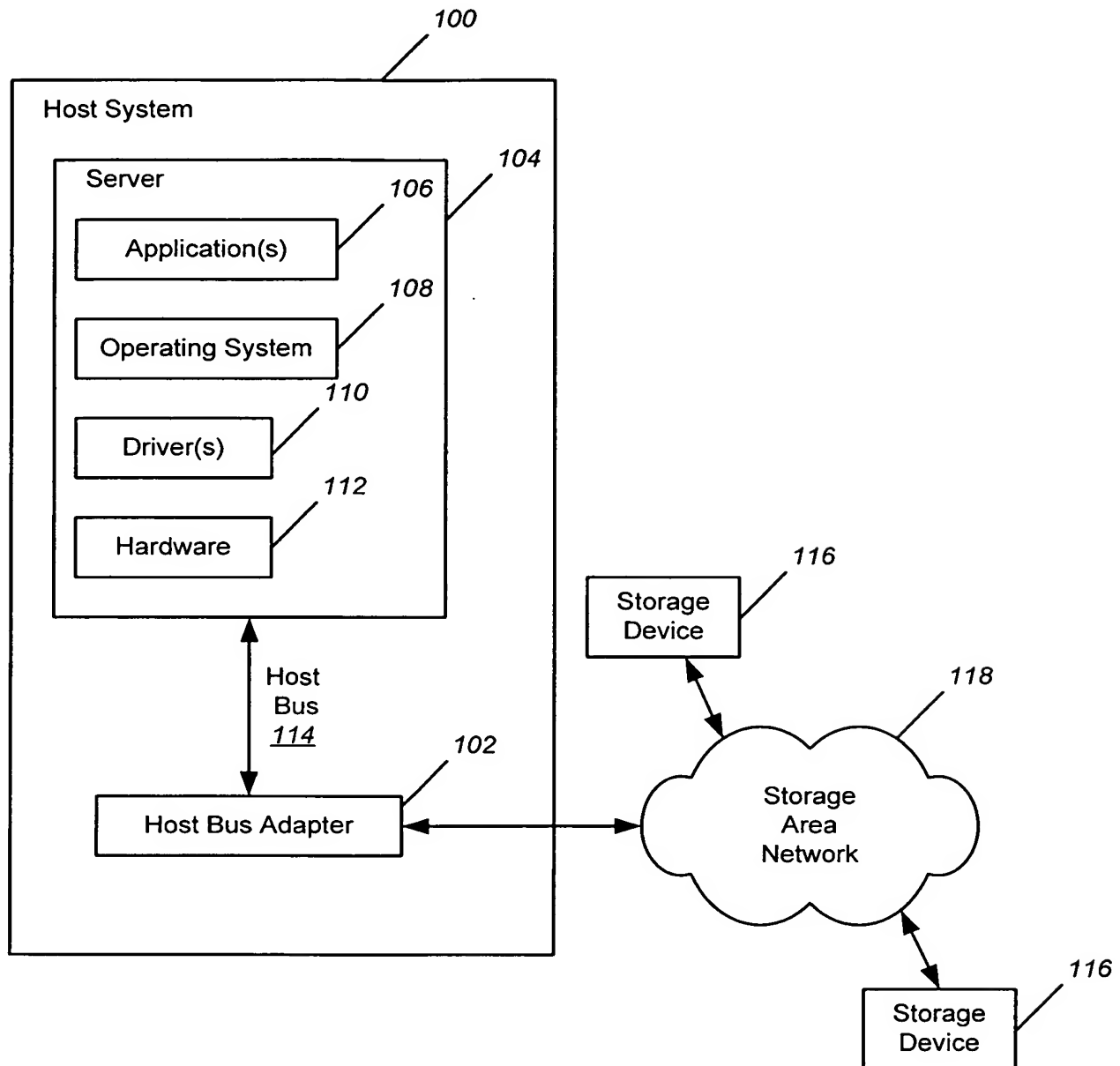


FIG. 1
(PRIOR ART)

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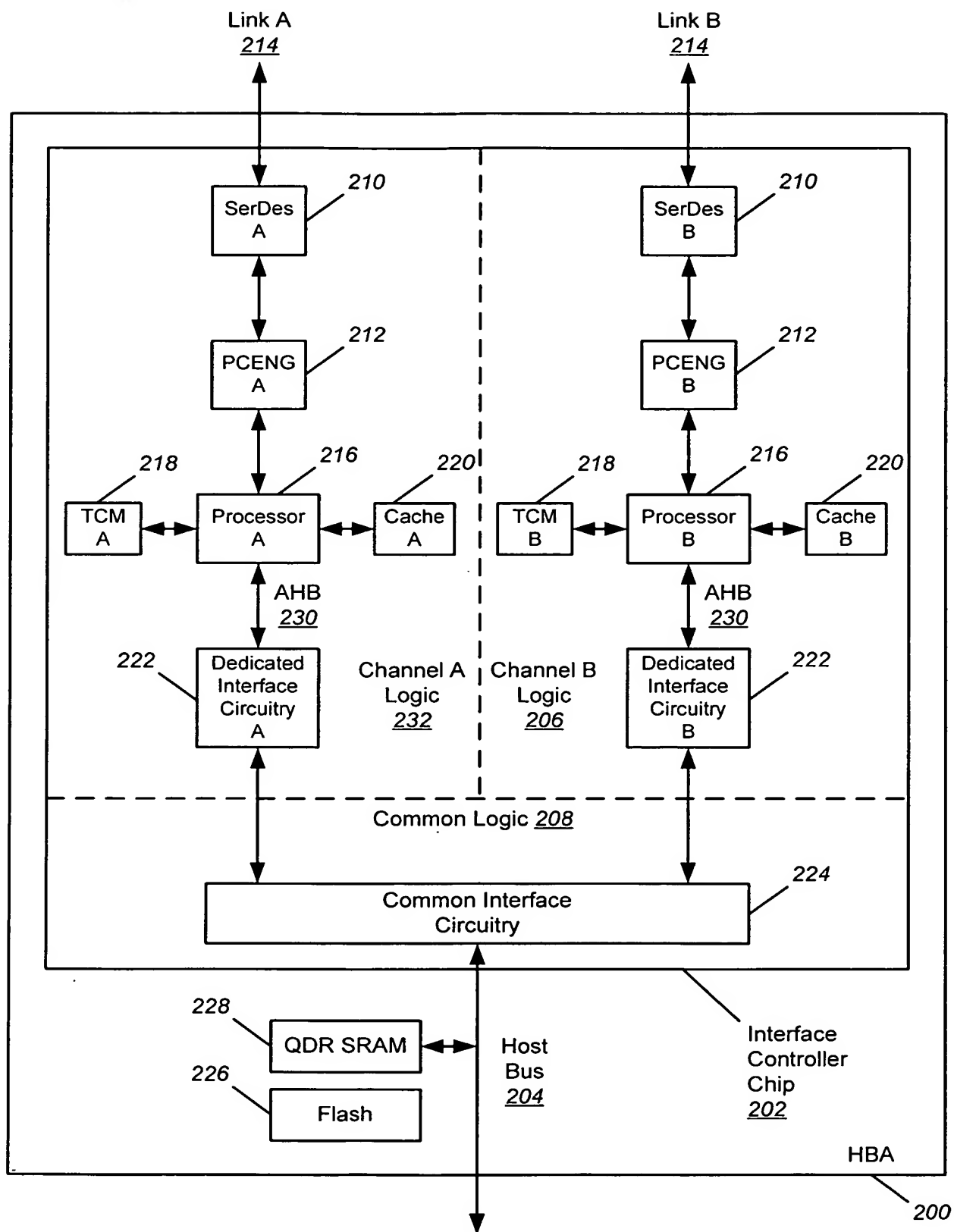


FIG. 2
 (PRIOR ART)

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